# FEASIBILITY OF GROWING CORN ON THE REGINA PLAINS

Application No. D-89-05-0541

Contractors: James Tanner
William Farley
Glen Morrison

Completion: October 10, 1989

## ABSTRACT

Four grain corn varieties were planted with side band phosphorus using a John Deere corn planter in May, 1989. Problems were experienced with misses due to a shortage of seed. Some problems were also experienced with pre-emergent and post-emergent weed control. Some plants died or lost vigour due to root damage caused by the row crop cultivator.

Firm conclusions cannot be made regarding feasibility of growing grain corn on the Regina Plains based on only one year's data. Economic analysis of one year's results indicates Durum Wheat had a higher return above seed costs compared to corn in 1989.

## OBJECTIVE

The objective of this project is to establish the economics and feasibility of growing hybrid corn on the Regina Plains. A second objective of this project is to measure the amount of residue returned to the soil by corn.

## PROCEDURE

In fall 1988, contractors controlled winter annuals with an application of 2,4-D. In May 1989, Avadex was applied and incorporated on the plot areas. Four grain corn varieties Pride K730, PIC2435, PIC2488 and PIC2120 were planted on the Regina Plains in 30 inch (76cm) spacings with an 8 row John Deere Max-Merge corn planter. Phosphorus was side banded at rates of 60 - 150 lb/ac. Target and Buctril M were applied for broadleaf weed control. In July, mechanical weed control was achieved with a row crop cultivator. Corn was straight combined in the fall with a Massey 760 combine.

Amount of residue returned to the soil was estimated by collecting and weighing material at nine square yard (.91m) sites on corn and durum wheat stubble.

RESULTS

- at time of emergence, purplish coloured coleoptiles were noted suggesting poor phosphorous uptake or herbicide injury
- some problems were experienced with misses due to a shortage of seed
- some problems were experienced with pre-emergent and post-emergent weed control
- some plants died or lost vigour due to root damage caused by the row crop cultivator
- plants ranged from 5 - 7 ft. (1.5 - 2.1m) in height; contractors observed 15 percent of plants barren and 10 percent non productive cobs

SUMMARY
(Tanner Site)

| Variety | bu/ac | gross return ($/ac) | seed cost ($/ac) | return above seed cost ($/ac) |
|---|---|---|---|---|
| K730 | 15 | 52.50 | 35 | 17.50 |
| PIC2488 | 35 | 122.50 | 35 | 87.50 |
| PIC2435 | 15 | 52.50 | 35 | 17.50 |
| PIC2120 | 10 | 35 | 35 | 0 |
| Kyle Durum | 25 | 100 | 8 | 92.00 |

*Assumption - Corn - $3.50/bu
Wheat - $4.00/bu

Results indicate that compared to the 4 grain corn varieties being investigated, Kyle Durum provided highest return above seed costs.

ESTIMATION OF CROP RESIDUE

| Crop | Residue (lb/ac) |
|---|---|
| Corn | 2856 |
| Wheat | 1663 |

Results suggest corn provides returns significantly more residue to the soil compared to wheat.

CONCLUSION

Firm conclusions cannot be made regarding feasibility of growing corn on the Regina Plains based on only one year's data. Production problems coupled with extreme heat stress resulted in lower than expected corn yield. Economic analysis of one year's results indicates Durum Wheat had a higher return above seed costs compared to corn in 1989. More experience in corn production and more favourable weather conditions may provide more favourable results in the future.

IMPACT

William Farley's suggestions for future projects:

- make sure of an adequate source of seed
- improve weed control
- post planting application of liquid fertilizer
- ensure row cultivation does not disturb root system
- seed on stubble but must be well managed
- need more training or education to produce a good corn crop
- select varieties with heat requirements of 2000-2100 units

Communication and technology transfer effectiveness was limited due to less than expected results coupled with staff changes during the conduct of the project.